

## Is relativistic length contraction real?

You must first come to terms with the fact that whether a stone, a ruler, or an astronaut shrinks by traveling is an issue that only concerns Physics. The problem is that it is usually non-physicists – *individuals who call themselves 'mathematical physicists'* – who boast that they know what happens in the real world through their equations. Mathematics can only describe. Math has no power or authority to explain causes and mechanisms... which is what mathematical 'physicists' claim to do when analyzing these cases.

Therefore, you will never get a rational answer on whether length contracts or doesn't (or both) from a mathematical 'physicist'. The same goes for time dilation and mass increase. Did the object flying away from you at *near-c* ( $c=300,000$  km/s= speed of light) actually gain matter, pounds, weight, mass, or whatever? Did the astronaut flying away from Earth actually stay young while his twin brother who remained behind aged? Did the ruler flying away from you at near-c actually contract? Or are these just mathematical exercises that the mathematical 'physicists' unjustifiably extrapolate into the real world? Well, for sure we don't need any Math, equations, variables, Lorentz factors, Einsteinian bubblegum time, or other elements coming out of Mathematical 'physics' to solve such issues.

We have two astronauts, each in his own starship, flying out of the Earth at near-c. One is flying away at 99%  $c$  and the other at 99%  $c$  and then some. Again, no Math is necessary, but we include these numbers so that mathematical 'physicists' can also follow along. Without some quantities and numbers in the explanation, they hopelessly get lost. For rational readers it's much easier: both astronauts are moving close to the speed of light, but one astronaut is flying faster than the other. I hope that's mathematically precise enough.

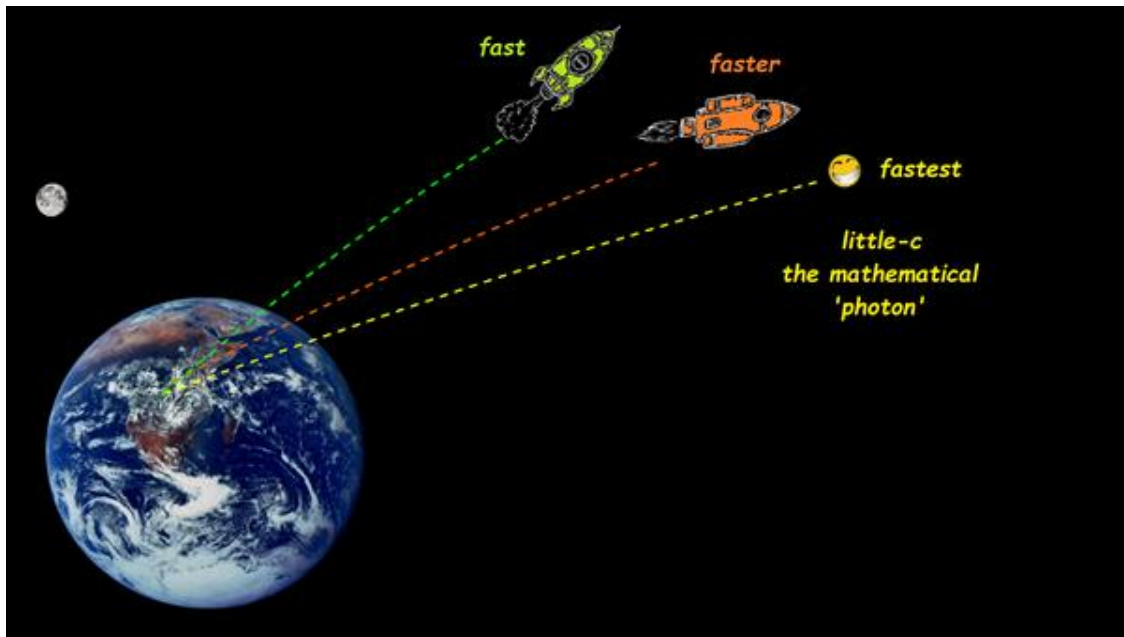
The controller who remained on Earth measures the clocks, rulers, and mass of the travelers differently than the travelers themselves while they're traveling.

Great!

Is this perception or real?

Let's find out the way we do it in Physics...

The astronauts return to Earth. They claim that their atomic clocks only measured around five years. The controller checks his calendar and it says that 36 years went by. The astronauts left in 2000 and returned in 2036. Who's right?



Easy. We count how many orbits the Earth did since they left. The controller is right. The astronauts and their atomic clocks are wrong. The predictions of the relativistic equation did not materialize. They did not affect the orbit of the Earth around the Sun. It's the difference between Mathematical 'physics' and genuine Physics!

We weigh the astronauts, their spaceships, and every item on board. In fact, we count every atom in each of the systems and find that the number more or less equals the number of atoms that comprised the systems when the astronauts left. No exaggerated Lorentzian/Einsteinian level changes in mass detected as predicted by relativity. It's the difference between Mathematical 'physics' and genuine Physics!

We finally measure the rulers the astronauts took with them. The faster traveler should have a shorter ruler, yet they measure more or less the same length as when they left. No Lorentzian/Einsteinian level length contraction here either. The predictions of the relativistic equations did not materialize. It was all in their heads. It's the difference between Mathematical 'physics' and genuine Physics!